REMARKS

This case has been carefully reviewed in light of the Office Action dated February 28, 2002, wherein claims 6 and 11 were rejected under 35 USC 102 (b) as being anticipated by the McCabria Patent, US Patent No. 4,409,502, wherein claims 1-5 were rejected under 35 USC 102(b) as being anticipated by or, in the alternative, under 35 USC 103(a) as obvious over the Tajima patent, US Patent No. 5,036,238, wherein claims 7 and 8 were rejected under 35 USC 102(b) as anticipated by or, in the alternative, under 35 USC 103(a) as obvious over the McCabria patent, wherein claims 7-10, and 12-13 were rejected under 35 USC 103(a) as being unpatentable over the McCabria patent in view of the Tajima patent, and wherein claim 14 was rejected under 35 USC 103(a) as being unpatentable over the McCabria patent in view of the Kleemann patent, US Patent No. 5,015,904. The Applicants have amended claims 3, 6, 9, 10, 12, and 13 and have provided the marked up versions of these claims in Attachment 1 to this amendment. The Applicants have provided a proposed drawing amendment for Fig. 1 as Attachment 2 to this amendment. No new matter has been added. The Applicants hereby request further examination and reconsideration of the present patent application in view of the following comments.

Applicants respectfully traverse the rejection of claims 6 and 11 under 35 USC 102(b) as being anticipated by the McCabria patent. The McCabria patent is related to electric machines and more particularly to improvements in the circulation of cooling gas through the structure of such machines. The McCabria patent, in column 3 line 63 to column 4 line 5, asserts:

> ***Fig. 6 is a cross sectional view of the interpolar space between two poles 54 and 56 of salient pole rotor 24. Wedge 30 includes radially disposed legs 31 and 33, and circumferentially disposed surface 35, which are arranged to form the sides of axial rotor cooling passage 37. Wedge 30 is shown to be in intimate thermal contact with rotor windings 58 and 60. Aperature 52 in surface 35 of wedge 30 extends through wedge***

retainer 62 to pass coolant out of wedge 30. A solid spacer 63 is located below winding 58 to facilitate assembly of the rotor.

The McCabria patent does not disclose the amended claim 6 of the present invention, provided in part below:

> ***a winding block disposed between the winding module and a corresponding one of the fins in each respective one of the spaces between the pole faces and the fins,***
> ***the winding block being disposed in an initial engagement position with the winding module,***
> ***the winding block being shaped to be shifted radially outward from the initial engagement position to a final position relative to the winding module when the rotor assembly is rotated at about its rated speed thereby compressing the winding module.***

The winding block 62 of Fig. 6 of the McCabria patent is not shaped so as to shift outward from the initial engagement position to a final position relative to the winding module 58, 60 of Fig. 6 of the McCabria patent when the rotor assembly is rotated at about its rated speed as is recited in claim 6 of the present invention above. The winding block 62 of Fig. 6 of the McCabria patent is not shaped so as to compress the winding module 58, 60 of Fig. 6 of the McCabria patent when the rotor body 24 of Fig. 6 of the McCabria patent is rotated at about its rated speed as recited in claim 6 of the present invention above. Under centrifugal forces created by rotating the rotor body 24 of Fig. 6 of the McCabria patent to about its rated speed, the winding block 62 would tend to move radially outward and uncompress the winding module 58, 60 of Fig. 6 of the McCabria patent.

The McCabria patent does not provide a winding block structure that is disposed to compress the winding module 62 when the rotor assembly is rotated at about its rated speed as provided in claim 6 of the present invention as provided above. For the reasons set forth above, the McCabria patent does not anticipate, teach, or suggest the recitations in the independent claim 6 of the present invention; therefore, the Applicants respectfully request that the rejection of independent claim 6 under 102(b) be withdrawn. Claim 11

depends from claim 6; therefore, the Applicants respectfully request that the dependent claim 11 is believed to be allowable for the reasons set forth above.

Applicants respectfully traverse the rejection of claims 1-5 under 35 USC 102(b) as being anticipated by, or in the alternative, under 35 USC 103(a) as obvious over the Tajima patent. The Tajima patent is related to a coil brace that holds the field coils between adjacent magnetic poles. The Tajima patent, in column 3 lines 5-14 in part, asserts:

> ***Fig. 3 shows a vector diagram of a relation of forces observed when magnetic coils are held by the coil brace. In the same figure, reference mark F represents a pressing force induced by tightening of the bolt 6; f_1 a coil pressing force of each pressing surface of the coil brace 5 against the associated field coil 3 in a direction perpendicular to the said pressing surface; and μ a slant friction coefficient. Thus, $f_1*\mu$ in the figure indicates a frictional force in the slant direction against the pressing force F.***

The Tajima patent asserts that the coil brace 5 of Fig. 3 of the Tajima patent acts to uncompress the field coil 3 of Fig. 3 of the Tajima patent when subjected to circumferential forces resulting from rotating the rotor 8 of Fig. 3 of the Tajima patent. The Tajima patent does not disclose the claim 1 of the present invention, provided in part below:

> ***a winding block disposed in engagement with the winding module and shaped to be shifted to a final position relative to the winding module when the rotor assembly rotates at about its rated speed to thereby compress the winding module.***

The coil brace 5 of Fig. 3 of the Tajima patent is not shaped so as to shift to a final position relative to the field coils 3 of Fig. 3 of the Tajima patent when the rotor 8 of Fig. 3 of the Tajima patent is rotated at about its rated speed as is recited in claim 1 of the present invention as provided above. The coil brace 5 of Fig. 3 of the Tajima patent is not shaped so as to compress the field coils 3 of Fig. 3 of the Tajima patent when the rotor 8 of Fig. 3 of the Tajima patent is rotated at about its rated speed as recited in claim 1 of the present invention as provided above. Under centrifugal forces created by rotating the rotor 8 of Fig. 3 of the Tajima patent to about its rated speed, the coil brace 5

of Fig. 3 would tend to move radially outward and uncompress the field coils 3 of Fig. 3 of the Tajima patent.

The Tajima patent does not provide a winding block 24 of Fig. 1 of the present invention that is disposed to compress the winding module 16 when the rotor assembly 10 is rotated at about its rated speed as provided in claim 1 of the present invention in part above. The Tajima patent does not teach or suggest an embodiment where the coil brace 5 of Fig. 2 of the Tajima patent is positioned so as to provide forces that are additive to the force F of the bolt 6 of Fig. 2 of the Tajima patent. For the reasons set forth above, the Tajima patent does not anticipate, teach, or suggest the recitations in the independent claim 1. For the reasons set forth above, claim 1 of the present invention is not obvious in light of the Tajima patent. Therefore, the Applicants respectfully request that the rejection of independent claim 1 under 102(b), and alternatively under 103(a) be withdrawn. Claims 2-5 depend from claim 1; therefore, the Applicants respectfully request that the dependent claims 2-5 are believed to be allowable for the reasons set forth above.

Applicants respectfully traverse the rejection of claims 7-8 under 35 USC 102(b) as being anticipated by, or in the alternative, under 35 USC 103(a) as obvious over the McCabria patent.

For the reasons set forth above, the McCabria patent does not anticipate, teach, or suggest the recitations in the independent claim 6. For the reasons set forth above, the claim 6 of the present invention is not obvious in light of the McCabria patent. Therefore, the Applicants respectfully request that the rejection of independent claim 6 under 102(b), and alternatively under 103(a) be withdrawn. Claims 7 and 8 depend from claim 6; therefore, the Applicants respectfully request that the dependent claims 7 and 8 are believed to be allowable for the reasons set forth above.

Applicants respectfully traverse the rejection of claims 7-10, 12, and 13 under 35 USC 103(a) as being unpatentable over the McCabria patent in view of the Tajima patent.

For the reasons set forth above, no combination of the McCabria patent and the Tajima patent anticipates, teaches, or suggests the recitations in the independent claim 6 from which claims 7-10, 12, and 13 depend. For the reasons set forth above, the claim 6 of the present invention is patentable over the McCabria patent in view of the Tajima patent. Therefore, the Applicants respectfully request that the rejection of claims 7-10, 12, and 13, which depend from claim 6, under 103(a) be withdrawn. The Applicants respectfully request that the dependent claims 7-10, 12, and 13 are believed to be allowable for the reasons set forth above.

Applicants respectfully traverse the rejection of claim 14 under 35 USC 103(a) as being unpatentable over the McCabria patent in view of the Kleemann patent.

The Kleemann patent is related to a winding support that is formed of flat flexible heat-resistant and insulating band-like material.

For the reasons set forth above, no combination of the McCabria patent and the Kleemann patent anticipates, teaches, or suggests the recitations in the independent claim 6 of the present invention. For the reasons set forth above, the claim 6 of the present invention is patentable over the Kleemann patent in view of the McCabria patent. Therefore, the Applicants respectfully request that the rejection of claim 14, which depends upon claim 6, under 103(a) be withdrawn. The Applicants respectfully requests that the dependent claim 14 is believed to be allowable for the reasons set forth above.

Summary

In view of the foregoing, Applicants respectfully submit that the application is in condition for allowance. Favorable reconsideration and prompt allowance of the application is respectfully requested.

Should the Examiner believe that anything further is needed to place the application in even better condition for allowance, the Examiner is requested to contact Applicants' undersigned representative at the telephone number below.

Respectfully submitted,

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Attachments

1) Amended claims with changes noted
2) Request for Approval of Amendment to the Drawing

Attachment1: Amended claims with changes noted

Amended claim 3, 6, 9, 10, 12, and 13 with changes noted.

3. (Amended once) A rotor assembly according to claim 2, wherein the tapered surface comprises a tapered surface friction coefficient, wherein the tapered surface friction coefficient is selected such that the winding block is shifted to the final position relative to the winding module when the rotor assembly rotates at about its rated speed.

6. (Amended once) A multi-pole electric machine rotor assembly comprising:

a rotor forging including a rotor body having poles directed along a direct axis with pole faces extending generally perpendicularly to a direct axis, and fins extending along a quadrature axis;

a winding module including a plurality of field windings positioned in spaces between the pole faces and the fins, and a winding insulator disposed between each successive pair of the field windings, respectively; and

a winding block disposed between the winding module and a corresponding one of the fins in each respective one of the spaces between the pole faces and the fins,

the winding block being disposed in an initial engagement position with the winding module,

the winding block being shaped to be shifted radially outward from the initial engagement position to a final position relative to the winding module when the rotor assembly is rotated at about its rated speed thereby compressing the winding module.

9. (Amended once) A rotor assembly according to claim 8, wherein the tapered surface comprises a tapered surface angle, wherein the tapered surface angle is selected such that the winding block is shifted to [a] the final position when the rotor assembly rotates at about its rated speed.

10. (Amended once) A rotor assembly according to claim 9, wherein the tapered surface further comprises a tapered surface friction coefficient, wherein the tapered surface friction coefficient is selected such that the winding block is shifted to [a] the final position when the rotor assembly rotates at about its rated speed.

12. (Amended once) A rotor assembly according to claim 11, wherein the tapered surface comprises a tapered surface angle, wherein the tapered surface angle is selected

such that the winding block is shifted to [a] the final position when the rotor assembly rotates at about its rated speed.

13. (Amended once) A rotor assembly according to claim 12, wherein the tapered surface further comprises a tapered surface friction coefficient, wherein the tapered surface friction coefficient is selected such that the winding block is shifted to [a] the final position when the rotor assembly rotates at about its rated speed.